

Running Head: Web Site Development for the North Shore Choral Society

Integrative Project Final Report

Web Site Development for the North Shore Choral Society

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Table of Contents

Table of Contents.....	2
Table of Figures	2
Project description.....	4
Project objectives	5
Tasks and schedule	5
Risk management	7
Final product	8
Select the web host	8
Present the host recommendation	12
Implement an email based ticket ordering system	13
Build a foundation for implementation of e-commerce.....	13
Demonstrate ticket ordering.....	14
Produce a fall back system	15
Plan e-commerce implementation	16
Survey the ticket selling practices of other organizations	16
Examine possible e-commerce options	17
Discuss two possible e-commerce choices	19
Recommend an approach.....	20
References.....	21
Appendix A – Presentation outline for September 9, 2006 North Shore Choral Society Board meeting.....	24
Appendix B – Stakeholder Letters.....	26
Appendix C – Product table	29
Appendix D – Ticket order form	30
Appendix E – Order print output.....	31
Appendix F – Order email output shown to user.....	32
Appendix G – Order email output to order fulfillment	33
Appendix H – Logic to generate product listing.....	34
Appendix I – Email from Tix.com	36

Table of Figures

Table 1 - Project results	5
Table 2 - Project schedule	6
Table 3 - Analysis of project risks	7
Table 4 - Comparison of hosting companies.....	12
Table 5 - Comparison of major e-commerce options	18

Abstract

This paper contains a recommended approach for the North Shore Choral Society to sell tickets on-line and build a foundation for future e-commerce activities. This approach includes selection of a new host for the North Shore Choral Society web site, an implementation of an email based ticket ordering system, the selection of a vendor to provide shopping cart and payment services, and an implementation approach to use the selected vendor.

Project description

The North Shore Choral Society explores, studies, and performs a wide range of choral music for the enrichment and enjoyment of its singers and audiences.

The North Shore Choral Society (NSCS) maintains a Web Site that informs the public about the nature of the organization, and provides information about upcoming performances. The site also contains information about past performances and a short page of information for organization members. The site address is www.northshorechoral.org and the Wilmette Public Library hosts it at no charge to the North Shore Choral Society.

This project examined several approaches to selling tickets through the North Shore Choral Society web site and recommended that the Board of the North Shore Choral Society authorize the implementation of two of these approaches.

The Society will benefit from the implementation of the recommendations. Concert goers will have additional ticket ordering options. This could increase ticket sales and be looked upon favorably by organizations that grant funds to the Society including the Illinois Arts Council.

The project also selected a host that allows commercial activities and presented a plan to move the current web site to that host. Relocating to a new host provides the added benefit of allowing the North Shore Choral Society to promote and sell CDs of past performances.

The project makes the assumption that the Board will elect to move ahead with the recommendations. If this is not the case, a revised plan can be developed to implement what the Board approves.

Project objectives

The project achieved its planned results for each objective.

Objective	Results
Provide the ability to conduct commercial activities on the North Shore Choral Society web site.	Five potential hosts were evaluated and one was recommended to the Board. AN Hosting was selected.
Implement a simple email-based ticket ordering system that does not require increased expenses.	A demonstration system was constructed, placed on a web host, and reviewed by Society and Board members.
Produce a plan to implement a full internet based ticketing system	Three major e-commerce alternatives were evaluated and a recommended implementation approach was presented to the Board on September 9, 2006. Use of PayPal.com including use of the PayPal shopping cart was recommended. A working demonstration of the use of PayPal was placed on the demonstration web site.

Table 1 - Project results

Tasks and schedule

The table below shows the project Gantt chart. Tasks shown in red were completed behind schedule. For these tasks, an asterisk shows when the task was actually completed.

Web Development for the North Shore Choral Society Project Gantt Chart as of August 26, 2006

	Week Number	1	2	3	4	5	6	7	8	9
	Month	Jul	Jul	Jul	Jul	Aug	Aug	Aug	Aug	Sep
	Week-beginning-on date	10	17	24	31	7	14	21	28	4
1 Choose project		x								
2 Send project proposal to Board Members and get feedback			X							
3 Revise proposal if necessary			X	X						
4 Select a hosting service that allows commercial activity			X				*			
5 Submit Final Proposal (due 8/6)						M				
6 Copy the existing site to the new host			X	X	M					
Obtain a second domain name			X							
Establish procedures to maintain both sites			X							
Populate the new host with the entire site			X	X						

	Communicate additional domain name to site reviewers		X						
7	Implement email based ticket ordering system	X	X	M					
	Build MySQL database of ticket types and prices	X							
	Obtain open source Javascript forms validation software	X							
	Write code in HTML, PHP, SQL and Javascript	X							
	Test locally and on host	X	X						
8	Invite review and incorporate feedback	X	X	X					
9	Review web sites of other music organizations		X	X					
	Revisit sites examined in First Course		X						
	Visit additional sites		X						
	Document "state of the market" & draw conclusions				X				
	Contact key Board Members to clear any business								
10	issues			M					
11	Submit Analysis Paper Outline (due 8/20)					M			
12	Evaluate ticket selling services and shopping carts		X	X	X	M			
	Create evaluation checklist (interfaces, pricing etc.)		X						*
	Build list of vendors/services to evaluate		X						
	Evaluate ticketing services			X	X				
	Evaluate shopping carts			X				*	
13	Submit Project Draft (due 9/3)								M
	Integrate results of prior tasks to produce two								
14	alternatives			X	X	*			
15	Meet with Tom Keller to sign and mail sponsor letter								X
16	Document costs, benefits and implementation plan(s)					X	X		
17	Finish project paper and incorporate revisions (due 9/10)					X	X		XM
18	Present plan to Board								
19	Submit Analysis Paper (due 9/15)								
20	Complete Implementation based on Board Action (not in scope of this project)								
	Fall back to existing host - delete new site OR								
	Keep new host but defer full ticketing system OR								
	Keep new host AND implement full ticketing system								
	Note to task 20:								
	Expecting to move site to anhosting.com								
	and implement interface to PayPal shopping cart								
	in late September if Board meeting goes as expected.								

Table 2 - Project schedule

Risk management

The risks identified in this project were managed successfully. The table below shows the risks identified, the original plan to mitigate the risk, and comments on what actually happened during the project. No unidentified risks arose during the project.

	Risk	Planned mitigation steps	Actual results
1	Funding for initial hosting will not be approved in the timeframe needed.	Personally fund the first 3-12 months of hosting.	During the project, the demonstration system was hosted on a desktop computer in my house. No funds needed to be spent on hosting during the project.
2	Automated ticket selling my required changes to the current business model. (Currently, seats are not reserved.)	Work with the Vice President of concerts to prepare seating maps of concert venues or find ways to use reserved seat system to sell unreserved seats.	The selected e-commerce approach (PayPal shopping cart and payment system) allows sales of unreserved seats. In fact, with this approach, reserved seating would be more difficult to handle.
3	New hosting environment may elongate development timeframe for new ticket form.	Start working on the new hosting environment immediately.	A desktop computer in my home was used on an interim basis. This defers this risk until after the end of the project. This risk must be managed in mid-September.
4	Board may not approve full ticketing system.	Communicate issues to Board Members and involved volunteers well before the September Board meeting. Also, have a "plan b" to used email-based ticketing.	An outline of the planned discussion and recommendations was sent to Board members in August. Based on discussions with members of the Board, the recommendations will be approved on September 9
5	Ticketing system cannot be installed since Board meeting does not occur until week 10.	Project has been planned to account for this.	A small demonstration page that connects to PayPal was placed on the desktop server. Several Board members tried it and liked how the demonstration worked.
6	It might be difficult to install a MySQL database on the selected host.	Ticket information and prices could be stored in a sequential file.	This was not a problem on the interim host. The selected host allows multiple MySQL databases. This risk must be managed in mid-September.
7	Transaction processing will required new procedures.	Include outline of new procedures in presentation to Board so there will be no "surprise changes".	The Vice President of Concerts is confident that the new procedures discussed will work. We can keep the new functions on the site hidden until we are confident the procedures are ready.
8	New system could be overly dependent upon a single Web Master.	Select and train an additional person.	The selected approach does not add significantly to the job of the Webmaster.

Table 3 - Analysis of project risks

Final product

The results for each project objective and the process used to achieve those results are discussed separately in each of the following three sections. These sections are “Select the web host”, “Implement an email based ticket ordering system”, and “Plan e-commerce implementation”.

The overall results were communicated to the Board of the North Shore Choral Society in a presentation on September 9, 2006. The outline of that presentation is shown in Appendix A. Letters and emails from some of the stakeholders in this project are shown in Appendix B.

Select the web host

The current web host for the North Shore Choral Society does not permit any commercial activities (North Suburban Library System, 2006). This unfortunately includes email based ticket ordering.

The North Shore Choral Society has been a registered user of techsoup.org for several years. This web site provides useful information to non-profit organizations. The article *How to Find a Good Web Hosting Provider* (Techsoup, 2006) was used to guide the process of selecting a new web host that will allow commercial activities. Four specific hosts were identified in this article. The site Hosting Review (Hosting Review, 2006) was used to identify more candidates.

The scope of the analysis can be more easily controlled by identifying what is not needed:

1. The current site has a low volume of visitors (approximately 600 per month). Therefore expensive options such as dedicated servers are not needed. Also, a small transfer rate of 20 gigabytes per month will be sufficient.

2. No proprietary databases such as ORACLE or Microsoft SQL Server are used.
3. The site currently uses only 52 megabytes of disk storage. No more than 100 megabytes is required during the next year. Most web hosts offer substantially more than this in their least expensive packages.
4. The North Shore Choral Society has no current requirement for business email addresses. As long as a host allows for outgoing email, additional email boxes and addresses are not needed.

There are some basic needs that must be met by the host we select.

1. Support for the HTML generator PHP and the open source database MySQL is required. Only one MySQL database is needed.
2. The hosting company must respond to technical support requests and questions in an effective manner. This was explored by scanning for complaints against the company using the Google search engine.
3. It must be possible and simple to move the site to another hosting company. The selected company must allow us to register our domain names independently.
4. Support must be provided to host multiple domain names such as northshorechoral.org, northshorechoral.us, northshorechoral.com plus others we might choose in the future. Four names will be the minimum requirement.
5. E-commerce must be allowed.
6. Freedom to select our own e-commerce shopping cart and payment methods is required.
7. The cost must be less than \$200 per year or \$16.66 per month.

The reason for the requirement to be able to leave the selected hosting company is to defend against the most serious common complaints against hosting companies.

These are:

1. The hosting company may suddenly terminate the contract if spamming complaints are received against the hosted site. The hosting company may block access to all web pages and data. This can happen even if the complaints are eventually shown to be false.
2. The hosting company can block access to the site and terminate the account if they deem the site uses too many resources. This can happen if there is an extremely high volume of visitors on a particular day or if a malfunctioning program on the site consumes too many resources.

The table below compares various hosting alternatives. All of the hosting companies listed in the table meet the requirements. The Host (Reference) column specifies the name of the hosting company and also refers to the item in the References section where further information about the hosting company can be found. The Bandwidth column specifies how much information can be transferred from the site each month before the account is blocked due to excessive use. The Disk space column specifies how much disk space can be used before it is necessary to upgrade to a more expensive plan. The Add-on Domains sub column specifies how many separate web sites could be hosted under a single account. For example the North Shore Choral Society could host its own site and then donate hosting services to other organizations using the add-on domains. Each organization could present its own content. The Parked Domains sub column specifies how many alternative domain names the North Shore Choral Society can use. Each parked domain name points to the same content.

Host (Reference)	Band width (gb)	Disk space (gb)	Add-on, parked Domains	Cost per Month	Positives	Negatives
AN Hosting (2006)	750	35	9, 10	6.95	<p>Based in Chicago. Very generous allocation of disk space and bandwidth. Ability to host 9 additional organizations. Free shopping cart software and self signed SSL certificate. Regular SSL certificate is extra. Recommended on Host Review (Host Review, 2006).</p> <p>One of the hosts recommended by Tech Soup. Customers seem satisfied with CrystalTech technical support. A 2.95 per month option is available if we drop our requirement for using a database.</p>	<p>Cannot run commands on the server (no shell access). Combination of midPhase and AN Hosting two years ago caused problems for some customers.</p>
CrystalTech (2006)	40	2	0,2	8.95		<p>Uses Windows. Other companies use Linux. Most of the open source (no charge) software we might want to use is easier to install under Linux. Email services that are included from other hosting companies cost extra. Potential corporate sponsors visiting the Electric Embers Web Site might discover this quote from one of the owners "We are vigorously anti-corporate, we don't wear suits except for weddings and funerals, and we like anybody that's stickin' it to The Man." (Electric Embers, 2006).</p>
Electric Embers (2006)	33		0,0	10.00+	<p>Company serves only non-profits. Owners are passionate about their mission.</p> <p>One of the hosts recommended by Tech Soup. Many features at a good price. Shopping cart software and shared SSL certificate available without additional charge. Is highly ranked by Hosting Review (Hosting Review, 2006).</p>	<p>Techsoup (Techsoup, 2006) reports that the sales staff can be heavy handed and that customer service is reliable but it can be difficult for the less technically inclined to follow.</p>
Lunarpages (2006) Pair	400 80	5 1.5	1,many 6,6	6.95 17.95	<p>Techsoup reports that</p>	<p>Expensive for</p>

Networks (2006)					Pair is a high quality service with great customer support. SSL certificate included.	immediate needs.
Host (Reference)	Band width (gb)	Disk space (gb)	Add-on, parked Domains	Cost per Month	Positives	Negatives
Speakeasy (2006)	Not limited	1	5,4	24.95	Author has positive experience with this vendor. Unlimited bandwidth and features that allow for more control over the site that other hosts allow. Well known successful host. Full e-commerce option available for \$39.95 per month. Extensive support for building product catalogs and stores. Attractive option if we were a serious retail business.	Very expensive relative to our needs. A Professional package with SSL certificate costs \$59.95 per month.
Yahoo(2006)	5	200	Unknown	11.95		Expensive relative to our needs.

Table 4 - Comparison of hosting companies

Present the host recommendation

The presentation to the Board of the North Shore Choral Society (Appendix A) recommends that AN Hosting be selected. The cost of \$84 per year is very reasonable for the service provided. The high number of add-on domains makes it possible to find a business that it willing to pay the hosting fee and then host the North Shore Choral Society for free using one of the add-on domains.

All of the hosts listed in the table above would meet the requirements of the North Shore Choral Society. The registration of the domain names used by the North Shore Choral Society will be registered at a company that is independent from the chosen host. This will facilitate moving the site to a different host if the selected host does not deliver as expected.

Implement an email based ticket ordering system

The email based ticket ordering system was expected to achieve three major objectives.

1. Build a foundation for implementation of e-commerce.
2. Demonstrate ticket ordering to facilitate discussion with members of the North Shore Choral Society.
3. Produce a fall back system in case a full e-commerce solution is not approved by the North Shore Choral Society Board.

These objectives were achieved. Each objective is discussed in a separate section below.

Build a foundation for implementation of e-commerce

It is important to keep the existing web site (www.northshorechoral.org) operating at all times. Therefore, an additional domain name (northshorechoral.us) was obtained from DirectNIC (DirectNIC.com Web Site, 2006). A complete web server was created on a spare desktop machine in the author's home using the approach described in an article by Vince Barnes in Htmlgoodies.com (Htmlgoodies Web Site, 2006). This server was loaded with the Apache Web Server (Apache, 2006), the PHP application server (PHP Network Site, 2006), and the MySQL database system (MySQL Web Site, 2006). The existing web site was copied onto the new server. Finally the additional domain name was pointed to the new server. During the course of the project, it was possible to see a copy of the web site plus all components under development at www.northshorechoral.us.

The MySQL database was loaded with all the products that the North Shore Choral Society sells. These products consist of various types of tickets such as season

tickets for seniors and tickets for the June concert. The definition of the database table and the listing of products that were loaded can be found in Appendix C.

Demonstrate ticket ordering

A simple print-and-email based ticket ordering system was developed. It allows a user to print or email a ticket order without providing sensitive credit card information. If the customer does not mail a check with the order, the person that receives the order calls the customer to obtain payment information before mailing the tickets.

The form the customer sees is shown in Appendix D. This form was implemented by using PHP to read the product table from the MySQL database and display all the products on the form. An existing package of Javascript code (Netscape Developer Site, 2003) was used to validate user input. Based on comments from North Shore Choral Society members, Javascript logic was added to dynamically calculate the product and order totals as the user selects the number of tickets to purchase. Also, Javascript was added to format numbers as currency. This logic was obtained from Javascript Source (Javascript Source, 2006).

The database demonstrated its usefulness during development when members requested that to sell tickets by concert date instead of selling just “single concert tickets”. Adding more rows to the product table was all that was required to implement this request.

When the user chooses to print an order, the output appears as shown in Appendix E. When the user chooses to email an order, the output appears as shown in Appendix F and an email that appears as shown in Appendix G is automatically sent to the person in charge of fulfilling orders.

The logic used in developing this demonstration system can easily be adapted for use in an e-commerce system. For example, Appendix H shows the logic for looping through the completed database and generating the product listing on the order form. This logic can be adapted to generate a product listing containing buttons that link to a commercial shopping cart.

Produce a fall back system

Before work began on the demonstration system, some minor changes were made to the existing web site so that even if the new logic was loaded onto the existing web site, no violation of the “no commercial activities rules” would occur. The existing tickets.html page was replaced with a tickets.php page so that logic could be added. All page references on the existing site were changed from tickets.html to tickets.php. Finally, logic was added in tickets.php to display a link to the new ordering forms only if the site was not hosted through the Wilmette Public Library. This was accomplished by checking the server name. In the future, if the site is moved back to the Wilmette Public Library, the new commercial activities will automatically disappear.

The existing site will be maintained in parallel to any new site. The existing domain name will remain pointing to the existing site at the Wilmette Public Library. When the new site is ready, logic will be added to the existing site to point to the new site. The new site will use the new name (www.northshorechoral.us). Users will see the new site. Should difficulties occur, the forwarding logic can quickly be removed and users will see the currently existing (old) site.

This arrangement could exist indefinitely in case at some future time it was desired to return to free hosting. However, it is likely that at some point the new site will become permanent and at such time, the existing domain name will be pointed to the

new site and maintenance of the site currently hosted through the Wilmette Public Library will be abandoned.

Plan e-commerce implementation

A four step approach was followed in order to recommend an approach to e-commerce for the North Shore Choral Society.

1. Survey the ticket selling practices of other organizations.
2. Examine possible e-commerce options.
3. Discuss two possible e-commerce choices.
4. Recommend an approach.

Each step is discussed in a separate section below

Survey the ticket selling practices of other organizations

The North Shore Choral Society does not yet sell tickets through its web site. There are some other musical organizations in the Chicago area that are in this position. There was no evidence of on-line ticket sales on the Apollo Chorus or the Savoy-Aires web sites (Apollo Chorus web site, 2006) (Savoy-Aires, 2003) (Savoy-Aires, 2006).

However, many organizations have implemented on-line ticket sales within the last three years. In 2003, the Evanston Symphony (Evanston Symphony, 2003) did not have on-line ticket sales. This year they do (Evanston Symphony, 2006). The same is true for Bach Week in Evanston (Bach Week, 2003) (Bach Week, 2006). Both of these local organizations have used an outside vendor to implement on-line ticket selling. Bach Week uses Tix.com. The Evanston Symphony uses the Kintera Organization (Kintera.org, 2006). The Michael O'Neal Singers in Atlanta also sell tickets on-line

(Michael O'Neal Singers, 2006). They display the options on their own site and the use PayPal to collect the payment. No outside ticket-selling organization is involved.

Examine possible e-commerce options

One way to examine the state of practice in an area is to examine materials published by vendors that claim to solve the problems in the area. The author selected Efuse and Jrox for this purpose (Efuse.com, 2006) (Jrox.com, 2006). Both vendors provide educational material on their sites

Most e-commerce solutions use shopping cart software to accumulate products that a customer has selected for purchase. The shopping cart software is used to gather payment information from the customer and then connect to one of the available merchant account payment providers such as 2Checkout.com, Authorize.net, SkipJack, Bank of America (Jrox.com, 2006). These services require that the vendor to provide a Merchant Account. The North Shore Choral Society currently accepts credit card payments through a Merchant Account but this account is not in the name of the North Shore Choral Society. Use of this Merchant Account could cause concertgoers to refuse to pay when they see an unfamiliar name of their credit card statement. There some payment solutions providers that do not require a Merchant Account such as PayPal.

Shopping cart software can be licensed from a vendor. There is also shopping cart software available for free download from open source web sites. The site on which the shopping cart software operates requires a secure server. This allows credit card and other sensitive information to be encrypted while it is being transferred from the customer's computer to the web site. Running a secure server requires a Secure Sockets Layer (SSL) Certificate which can be licensed from one of several vendors. The site that accepts the credit card information is responsible for protecting it from accidental release and from hackers.

The table below describes three major options for where to locate the product catalog, where to locate the shopping cart, and how to process payments. Within each major option there are many variations such as which vendor to choose to provide the shopping cart software or service and which vendor to choose to process payments. The table shows vendors that would meet the needs of the North Shore Choral Society.

Option	Product Catalog Location	Shopping Cart Location	Payment Method	Positives	Negatives
1. Do-it-yourself	NSCS site	NSCS site (use open source Zen Cart)	NSCS provides credit info directly to merchant account payment provider	Total control.	Need secure server infrastructure and SSL Certificate. Must protect sensitive information (great risk). Upfront software and implementation costs. Requires the most on-going technical skills.
2. Outsource shopping cart	NSCS site	Vendor Site (PayPal)	Vendor Site (PayPal)	Little upfront cost. Not difficult to implement. No need to manage sensitive information. Very reasonable cost. No merchant account required.	Must implement product catalog. Need to open account with payment processor. Requires some on-going technical skill
3. Outsource everything	Vendor site (Tix.com)	Vendor Site (Tix.com)	Vendor Site (Tix.com)	Almost no upfront cost. No need to implement product catalog. No on-going technical skill requirement.	More expensive than just outsourcing the shopping cart.

Table 5 - Comparison of major e-commerce options

Discuss two possible e-commerce choices

The first option in the table above is not recommended because of the implementation effort and the risk to the North Shore Choral Society. Either of the other two options is workable. Both of the workable options have the advantage of having no upfront charges and no fixed (monthly) charges. Both options have low exit costs. Tix.com can handle the entire sales process including printing and mailing the tickets. It is the easiest option to implement. Under this option, the North Shore Choral Society (NSCS) would provide information about the event(s) and a single link from the NSCS web site to Tix.com. Tix.com would do the rest. Tix.com has the ability to provide other services to charities such as handling donations by credit card.

Tix.com charges \$1.50 per ticket. If printing and mailing is selected, an additional \$3.50 is charged per order. If the Tix.com Merchant Account is used, an additional 5% of the ticket price is charged and NSCS does not receive any funds until 7-13 days after the event. The relationship with Tix.com can be terminated without cost just by not signing agreements for additional events. Appendix I contains an email from Sylvia Mahoney at Tix.com explaining various options for working with Tix.com. The author has a copy of the Master Sales Agreement with Tix.com and can provide copies to members of the North Shore Choral Society. Others should contact Tix.com directly.

PayPal (PayPal, 2006) can be used if more implementation effort is expended. In this option, products (tickets) would be listed with prices on the NSCS web site. Each product would contain a button nearby for the customer to push to add the product to the PayPal shopping cart. The button would take the customer to the PayPal shopping cart where he/she could checkout and pay for the ticket(s) or return to the NSCS site to shop some more. PayPal handles the payment processing for 39 cents per ticket plus 2.9% of the ticket price. NSCS would do its own ticket printing and mailing and would receive

funds as customers purchased tickets. There would be no need to wait until 7-13 days after the event to receive funds.

Recommend an approach

The recommended approach is to connect the NSCS web site to PayPal immediately after the site is moved to AN Hosting where commercial activities are allowed. The North Shore Choral Society has access to volunteer labor to do the implementation work and this gives the lower cost PayPal option the advantage over the higher cost Tix.com option. The PayPal fees could be mostly offset if NSCS decided to impose a \$1.00 convenience fee per ticket.

To implement the PayPal approach, NSCS would need to open a PayPal account. There is no charge for doing this. The email address specified in this account would be placed on the NSCS web site as part of the definition of the PayPal shopping cart buttons. This is the link that will cause NSCS to receive the funds every time a customer purchases a ticket.

For minimal cost, the North Shore Choral Society can join other organizations such as Bach Week and the Evanston Symphony that are already selling tickets on-line.

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Appendix A – Presentation outline for September 9, 2006 North Shore Choral Society Board meeting

1. What are the reasons for this project?
 - a. We want to transact business on the web.
 - i. Our current host that we access through the Wilmette Public Library does not allow commercial activities.
 - ii. We would like to sell tickets using our web site.
 - iii. We may want to perform other commercial activities in the future.
 - b. I need graduate school credit.
2. What steps must we take to transact business on our web site?
 - a. Select another host and move our site.
 - b. Direct our customers to the new location.
 - c. Add e-commerce capabilities.
 - i. Create our product catalog.
 - ii. Add new pages to our site.
 - iii. Connect to a service that will accept credit card information from our customers and send us money (we do not want to take responsibility for securing and managing credit card information on our own site)
3. What process was followed to select a new host?
 - a. Read articles on the process (techsoup.org, Htmlgoodies.com).
 - b. Register a second domain name (northshorechoral.us).
 - i. It is important to own the domain names ourselves. Disputes with hosting services have caused others to lose their domain names.
 - ii. We need flexibility to change hosts
 - c. Create a web server at home and point northshorechoral.us to it.
 - d. Develop our list of requirements.
 - e. Build a list of potential hosts.
 - f. Gather data from the potential hosts.
 - g. Search the internet for complaints about each host.
 - h. Select one host.
4. Which host was selected and how much will it cost?
 - a. www.anhosting.com will charge us \$6.95 per month.
5. What must we do to move our site to the selected host?
 - a. Upload our web site to the new host. Keep the master copy ourselves.
 - b. Setup procedures to take frequent backups of any data that changes on the web site in case of a dispute with the host.
 - c. Retain our domain names in case of a dispute with the host. (northshorechoral.us at directNIC and northshorechoral.org and Domain Registry of America).
 - d. Point northshorechoral.us to the new host.

- e. Temporarily leave northshorechoral.org pointing to the Wilmette Library server but change our home page to automatically redirect customers to northshorechoral.us.
 - f. Confirm the new host works as expected.
 - g. Point northshorechoral.org to the new host. Until this is done, we can drop back to the Wilmette Library at a moment's notice.
6. What must we do to add e-commerce capabilities?
- a. Select a strategic direction
 - i. Do nothing.
 - ii. Stop after implementing print/email based ticket forms.
 - iii. Contract with a service to handle all aspects of ticket selling.
 - 1. Tix.com (Bach Week)
 - 2. Kintera.org (Evanston Symphony)
 - iv. Contract with a payment service to handle payments.
 - 1. Checkfree.com
 - 2. Paypal.com
 - v. Build a complete e-commerce web site ourselves. Use our own merchant account; acquire payment gateway and shopping cart software.
 - b. Decide if we want to continue using the recently developed email/print based ticket ordering form.
 - c. Implement the selected direction.
 - i. Example 1: Tix.com
 - 1. Sign an agreement with Tix.com. Agree to pay \$1.50 per order plus 5% of sales to Tix.com
 - 2. Specify our products to Tix.com and show them our web site.
 - 3. Add a link from our web site to Tix.com.
 - 4. Consider use of other Tix.com services such as donation by credit card.
 - 5. Receive fulfillment reports as sales are made and ship tickets. (Alternatively, for \$3.00 per order Tix.com will print and mail tickets)
 - 6. Receive a single check from Tix.com one week after the concert.
 - 7. Deposit the check into our bank.
 - ii. Example 2: paypal.com
 - 1. Open a free PayPal account and tie it to our bank account.
 - 2. Build a ticket ordering page on our web site with links to the PayPal shopping cart. One link is required for each product.
 - 3. Receive emails from PayPal as sales occur and mail tickets to customers.
 - 4. Receive money in our PayPal account as each sale occurs and periodically electronically transfer money from our PayPal account to our bank account.
 - 5. Consider other uses of PayPal such as donation by credit card.
 - d. Continuously monitor and improve the implemented solution.

Appendix B – Stakeholder Letters



P.O. Box 103 Evanston, Illinois 60204-0103
(847) 272-2351

September 10, 2006

To whom it may concern:

Jim Miller is the volunteer webmaster of the North Shore Choral Society. Last year the Society celebrated its 70th anniversary. I am the Vice President, of Concerts for the North Shore Choral Society. Jim has worked for me on the project to sell concert tickets using our web site. Jim has done all the design and implementation work on the project. He has implemented an e-mail-based ticketing system that we can use for selling season and concert tickets. He has also implemented a demonstration of how tickets could be sold using PayPal.

Yesterday, Jim presented the results of his efforts in the form of a proposal to the North Shore Choral Society Board of Directors. The Board was every impressed by the results and voted unanimously to authorize Jim to proceed with the implementation of his proposal.

I expect that Jim will turn the demonstration into a production system before our first concert of the 2006–2007 concert season. This work plus the work that Jim has done so far will benefit the North Shore Choral Society by providing concertgoers with an additional means of purchasing tickets. This can lead to increased ticket sales.

If there are any questions regarding what I have written, you may contact me by e-mail at tomkeller@comcast.net or by telephone at 847.405.9325.

Sincerely yours,

A handwritten signature in cursive script that reads "Tom Keller".

Tom Keller
Vice President, Concerts

The North Shore Choral Society explores, studies, and performs a wide range of choral music for the enrichment and enjoyment of its singers and audiences.

Re: North Shore Choral Society September 9 Board Meeting - Message (HTML)

You replied on 9/1/2006 9:35 PM.

From: Rigotti [rigotti@earthlink.net] Sent: Fri 9/1/2006 8:49 PM
 To: Anthony Green; Jim Miller; David Hunt; Donald Chen; Hank Bohanon; John Shea; Julie McDowell; Len Barker; Nancy Friday; Sharon Peterson; Susan Wiegand; tomkeller@comcast.net; Wylie Crawford
 Cc:
 Subject: Re: North Shore Choral Society September 9 Board Meeting

Jim:

The test worked for me as well and NSCS is \$2.61 "richer"!

I'm inclined to think this is a great idea - as you know, I've been anxious to move to a server where we can link (and not surreptitiously) to the websites of our advertisers.

I've heard positive things about PayPal. Server-wise, I was recently made aware of (www.networksolutions.com), where they have a nice \$9.95 per month offering - but you may have that beat with \$6.95 per mo.

Let's move NSCS to the cutting edge of web technology (and help Jim get graduate school credit! <g>),

Karen

At 10:22 AM 8/24/2006, Anthony Green wrote:

I have run the test and it worked fine.
 You're doing a great job. If we can sell tickets on line without substantial cost it will be a real step forward. Should be an interesting discussion
 I have found PayPal to be reliable. They're part of eBay, of course. I don't know anything about Checkfree.com, nor the proposed host.
 Anthony

----- Original Message -----
 From: [Jim Miller](#)
 To: [Anthony Green](#) ; [David Hunt](#) ; [Donald Chen](#) ; [Hank Bohanon](#) ; [John Shea](#) ; [Julie McDowell](#) ; [Karen Rigotti](#) ; [Len Barker](#) ; [Nancy Friday](#) ; [Sharon Peterson](#) ; [Susan Wiegand](#) ; [tomkeller@comcast.net](#) ; [Wylie Crawford](#)
 Sent: Sunday, August 20, 2006 11:12 AM
 Subject: North Shore Choral Society September 9 Board Meeting

To the Board of the North Shore Choral Society:

I have requested time during the September 9 Board Meeting to present a plan for conducting business (selling tickets) on our web site. Below is an outline of what I am currently planning to cover. I would be happy to answer questions between now and then.

Also, this is an early opportunity to influence the project. You will have a formal opportunity on September 9 when you can either vote the project out of existence or select the next steps. As you might guess, I will be doing my best to convince you we should move forward.

By the way, you have an unusual opportunity to donate \$3.00 to the North Shore Choral Society by visiting <http://www.northshorechoral.us/ticketord2.php>. This is the page that was used to test the mechanics of connecting our web site to a payment service.

Re: North Shore Choral Society September 9 Board Meeting - Message (HTML)

File Edit View Insert Format Tools Actions Help

Reply Reply to All Forward

You replied on 8/24/2006 10:28 AM.

From: Anthony Green [AnthonyRGreen@sbcglobal.net] Sent: Thu 8/24/2006 10:22 AM
 To: Jim Miller; David Hunt; Donald Chen; Hank Bohanon; John Shea; Julie McDowell; Karen Rigotti; Len Barker; Nancy Friday; Sharon Peterson; Susan Wiegand; tomkeller@comcast.net; Wylie Crawford
 Cc:
 Subject: Re: North Shore Choral Society September 9 Board Meeting

I have run the test and it worked fine.
 You're doing a great job. If we can sell tickets on line without substantial cost it will be a real step forward. Should be an interesting discussion
 I have found PayPal to be reliable. They're part of eBay, of course. I don't know anything about Checkfree.com, nor the proposed host.
 Anthony

----- Original Message -----
From: Jim Miller
To: Anthony Green ; David Hunt ; Donald Chen ; Hank Bohanon ; John Shea ; Julie McDowell ; Karen Rigotti ; Len Barker ; Nancy Friday ; Sharon Peterson ; Susan Wiegand ; tomkeller@comcast.net ; Wylie Crawford
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Jim

1. What are the reasons for this project?
 - a. We want to transact business on the web.
 - i. Our current host that we access through the Wilmette Public Library does not allow commercial activities.
 - ii. We would like to sell tickets using our web site.
 - iii. We may want to perform other commercial activities in the future.
 - b. I need graduate school credit.
1. What steps must we take to transact business on our web site?

Appendix C – Product table

```
-- MySQL dump 10.9
```

```
--
```

```
-- Host: localhost Database: nscs
```

```
-----
```

```
-- Server version 4.1.9-max
```

```
-- Table structure for table `product`
```

```
--
```

```
DROP TABLE IF EXISTS `product`;
CREATE TABLE `product` (
  `product_id` int(5) NOT NULL auto_increment,
  `grp_id` int(5) default NULL,
  `proddisplcode` varchar(8) default NULL,
  `proddescr` varchar(70) default NULL,
  `prodprice` float(5,2) default NULL,
  PRIMARY KEY (`product_id`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
--
```

```
-- Dumping data for table `product`
```

```
--
```

```
INSERT INTO `product` VALUES
(1,1,'A01','Regular Season Ticket (all three concerts)',60.00),
(2,1,'A02','Senior (age 65 and over) Season Ticket',50.00),
(4,1,'B01','Regular December Concert Ticket',22.00),
(5,1,'B02','Senior (age 65 and over) December Concert Ticket',20.00),
(7,1,'B04','Child (age 12 and under) December Concert Ticket',12.00),
(10,1,'B10','Regular March Concert Ticket',22.00),
(11,1,'B11','Senior (age 65 and over) March Concert Ticket',20.00),
(12,1,'B12','Child (age 12 and under) March Concert Ticket',12.00),
(20,1,'B20','Regular June Concert Ticket',22.00),
(21,1,'B21','Senior (age 65 and over) June Concert Ticket',20.00),
(22,1,'B22','Child (age 12 and under) June Concert Ticket',12.00);
```

Appendix D – Ticket order form

North Shore Choral Society - Microsoft Internet Explorer
 Address: http://www.northshorechoral.us/ticketord.php

Email or Print Ticket Order

You can print or email the form below.
 This is not a secure form so please do not enter any credit card information.

First Name:
 Middle Initial:
 Last Name:
 Street Address:
 City:
 State:
 Zip Code:
 Telephone:
 Email Address:

Type of Ticket	Qty Desired	Unit Price	Total Cost
Regular Season Ticket (all three concerts)	1	\$60.00	\$60.00
Senior (age 65 and over) Season Ticket	0	\$50.00	\$0.00
Regular December Concert Ticket	0	\$22.00	\$0.00
Senior (age 65 and over) December Concert Ticket	0	\$20.00	\$0.00
Child (age 12 and under) December Concert Ticket	0	\$12.00	\$0.00
Regular March Concert Ticket	0	\$22.00	\$0.00
Senior (age 65 and over) March Concert Ticket	0	\$20.00	\$0.00
Child (age 12 and under) March Concert Ticket	0	\$12.00	\$0.00
Regular June Concert Ticket	2	\$22.00	\$44.00
Senior (age 65 and over) June Concert Ticket	0	\$20.00	\$0.00
Child (age 12 and under) June Concert Ticket	0	\$12.00	\$0.00

Grand Total: \$104.00

Format to Print Reset Email Reset

Please enter a Street Address Internet

Appendix E – Order print output

Results - Microsoft Internet Explorer

File Edit View Favorites Tools Help Address <http://www.n...> Go

Back Forward Stop Refresh Home Search Favorites

Y! Search Web

Results Add Tab

North Shore Choral Society Ticket Order

Print and mail this form to
 North Shore Choral Society
 P.O. Box 103
 Evanston IL 60204-0103

Make checks payable to North Shore Choral Society

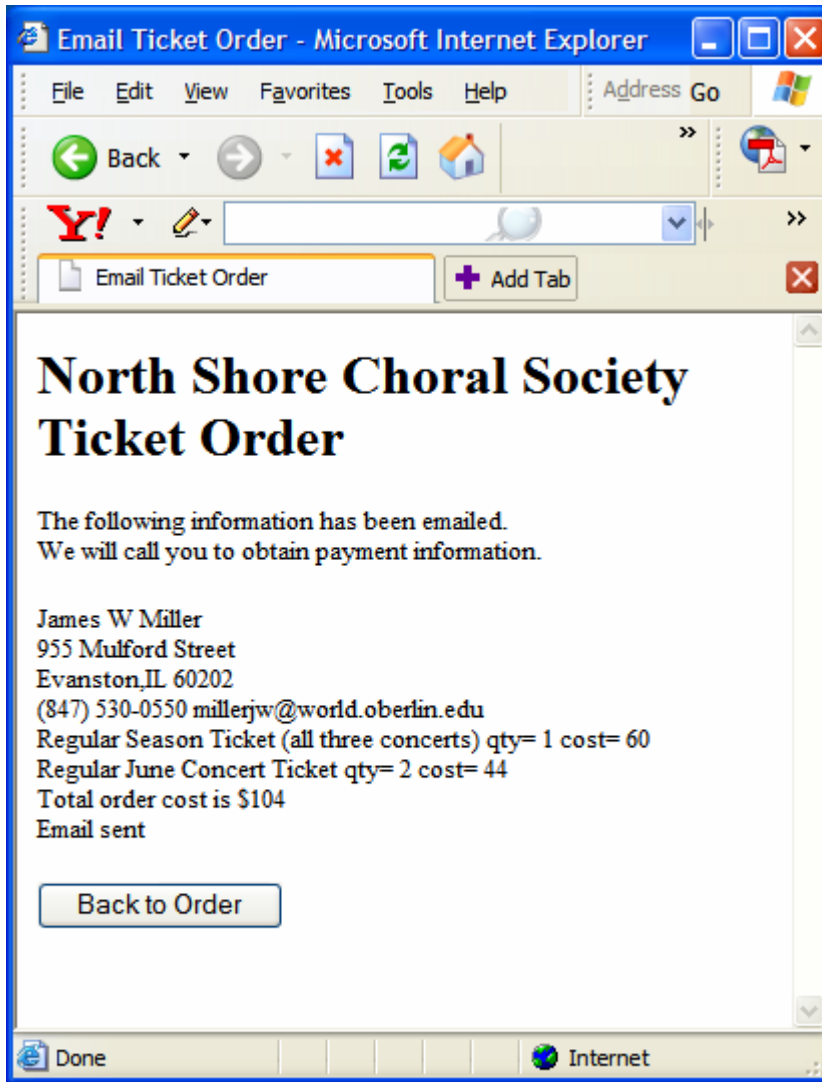
Last Name	Miller
First Name	James
Street Address	955 Mulford Street
City	Evanston
State	IL
ZIP Code	60202
Phone Number	(847) 530-0550
Email	millerjw@world.oberlin.edu

Ticket Type	Quantity	Price	Total Cost
Regular Season Ticket (all three concerts)	1	\$60.00	\$60.00
Regular June Concert Ticket	2	\$22.00	\$44.00
Grand Total			\$104.00

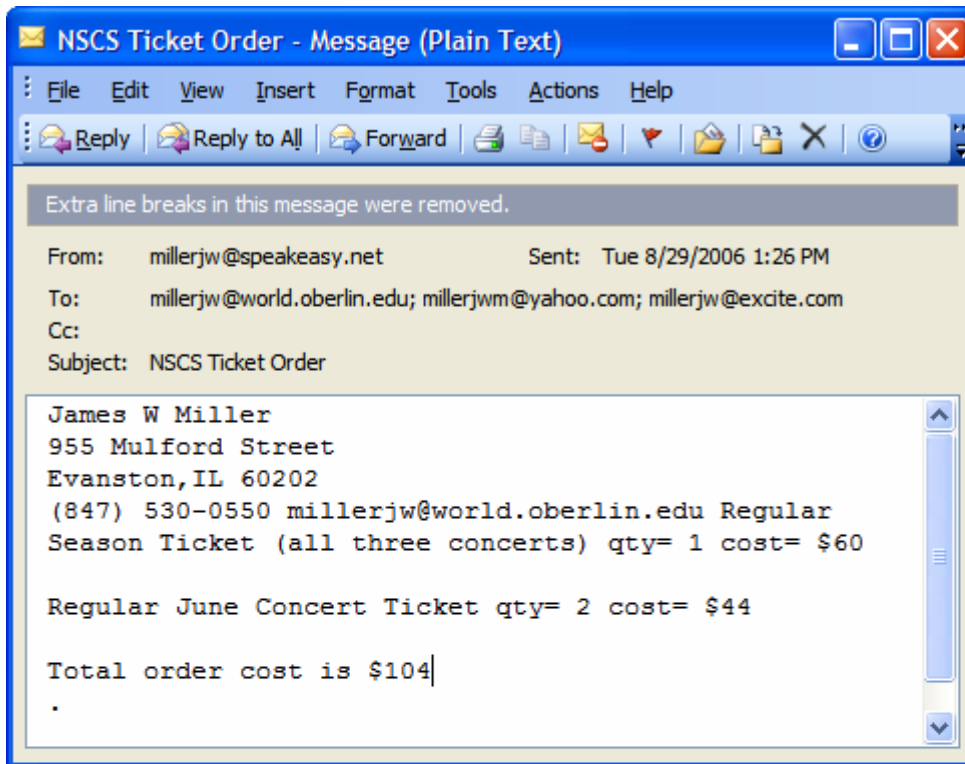
Print Page Back to Order

Done Internet

Appendix F – Order email output shown to user



Appendix G – Order email output to order fulfillment



Appendix H – Logic to generate product listing

```

<?php
    /* This processing reads the product (ticket) information from the
    NSCS database */
    /* It displays that information on the ticket order form */
    /* Finally, it counts the number of products and hides that number
    on the order form for later use */
    include 'include/db.inc';
    include 'include/error.inc';
    include 'include/clean.inc';
    $connection = $con1;
    if(!mysql_select_db($databaseName,$connection)) showerror();
    echo "<tr><td>Type of Ticket</td><td>Qty Desired</td><td>Unit
    Price</td><td>Total Cost</td></tr>";
    $query = "SELECT proddescr, prodprice
              FROM product ORDER BY proddisplcode";
    if (!$result = @ mysql_query($query, $connection)) showerror();
    $linecount = 0;
    while ($row = @ mysql_fetch_array($result)) {

        $buffer = "\r\n\r\n<tr><td><INPUT type=\"hidden\"
name=\"typeticket\" . $linecount . "\"";
        $buffer .= " value=\"" . $row["proddescr"] . "\">";
        $buffer .= $row["proddescr"] . "</INPUT>" . "</td>";

        echo $buffer; /* Type of Ticket */

        echo "<td><select name=\"qty\" . $linecount . \"
onChange=\"calcCosts(this.form)\" onMouseOver=\"calcCosts(this.form)\">";
//
        echo "<td><select name=\"qty[$linecount]\">";
        echo "<option value=\"0\" selected>0</option>";
        $optcount = 1;
        while ($optcount < 15) {
            echo "<option value=\"" . $optcount . "\">" .
$optcount . "</option>";
            $optcount = $optcount + 1;
        }
        echo "</select></td>"; /* Quantity Desired */

        echo "<td><input type=\"hidden\" name=\"unitprice\"
.$linecount . \" size=\"10\" value=\"" . $row["prodprice"] . "\"
. "READONLY>$" . $row["prodprice"] . "</td>"; /* Unit Price
*/

        echo "<td><input type=\"text\" name=\"totcost\" . $linecount
. \" size = \"10\" READONLY></td></tr>"; /* Calculated Total Cost */

        $linecount = $linecount + 1;
    }

```

```
echo "<tr><td><input type=\"hidden\" name=\"prodcount\"  
value=\"\" . $linecount . "\"></td></tr>"; /* Hide product count */
```

```
?>
```

Appendix I – Email from Tix.com

Tix, Inc. - Additional Information and Agreement - Message (HTML)

File Edit View Insert Format Tools Actions Help

Reply Reply to All Forward

Click here to turn on links. To help protect your security, links are turned off in this message.
 You replied on 8/4/2006 8:00 PM.
 This message was sent with High importance.

From: Silvia Mahoney [silvia.mahoney@tix.com] Sent: Fri 8/4/2006 6:14 PM
 To: millerjw@world.oberlin.edu
 Cc: millerjwm@yahoo.com
 Subject: Tix, Inc. - Additional Information and Agreement

Attachments: MasterAgreementTixMerchantAccount.pdf (92 KB); ESAInstructions.doc (424 KB); EventAddendum.doc (27 KB)

Hi Jim,

I'm glad we were able to speak earlier. The following covers some of what we discussed on the phone, as well as additional information about our company and system:

www.TIX.com is a leading low-cost provider of Online and Box Office ticketing solutions for a wide variety of organizations, including festivals, performing arts centers, theatres, arts associations and sporting events. We serve over 950 organizations across the U.S., and offer one of the lowest fee schedules in the industry. Despite our low cost, our service is state-of-the-art and features one of the most intuitive ticketing interfaces available. We do not charge any set up fees, monthly fees, or require a long-term exclusive contract to use our service.

We seamlessly integrate ticket sales into your existing web site by simply adding a link. Feel free to view some of our Private Label examples such as [Las Vegas Little Theatre](#), [Madrid Theatre](#) and [Roxey Ballet](#). You will notice that we have customized our site to appear identical to each of our client's sites. This makes ticket purchasing easier for their patrons, and allows them to build their brand and not ours. Whether using Tix for Box Office sales or Online sales, you will have complete access to all of our Box Office functions, including ticket sales, comp sales, ticket printing, and a full suite of real-time reporting options designed to ease your workload and increase attendance.

Our fees are \$1.50 per ticket for online orders, 25 cents per ticket for box office/offline orders and \$3.50 per ticket for orders placed through our optional 24-hour, toll free call center. We allow you the flexibility of using your own online merchant account, or ours to process credit cards. When using our merchant account for credit card processing, there is an additional 5% per ticket processing fee for all credit card orders. When using our merchant account for credit card processing, we send a check for ticket sales on the Friday after events held through the previous Sunday (5-12 days later). When using your merchant account, the money goes directly into your bank account 48-72 hours after each ticket purchase. Most of our clients choose to pass all the fees along to the patrons. This enables them to use our service at no cost to their organization. Some clients choose to embed some or all of our fees into the ticket price. It's up to you.

We also have a number of additional services available to you, all of which can be used at no cost to your organization. These include:

- Subscriptions/Memberships
- Ticket Printing and Mailing
- E-Ticketing
- Discount Ticket Codes
- E-Mail Marketing
- Mailing Lists
- Customer Surveys
- Donations

Per our conversation, I've attached a copy of our Master Ticket Sales Agreement for your review. I've also attached a copy of an Event Sales Addendum. (We set up your events based on the information contained on this form.) Please note that the Agreement is based on using our merchant account to process credit cards. Should you decide to move forward, you can fax the forms back to us at (562) 951-1463. In the meantime, please don't hesitate to give me a call, or e-mail me if I can be of any further assistance.

Best regards,

Silvia Mahoney
www.TIX.com
 800.504.4849 Ext. 233
 562.951.1463 Fax